

**VIDEOS LINK**

Additional Information

For

**(LECTURE-11 TO LECTURE-20)****BIORESOURCE TECHNOLOGY****(ChBC-82)**

Lectures	S. No.	Videos Link
<b>Lecture-11</b>		<b>Activated Carbon</b>
	1.	<a href="https://www.youtube.com/watch?v=GNKeps6plao">https://www.youtube.com/watch?v=GNKeps6plao</a>
		<b>Making Activated Carbon-</b>
	2.	<a href="https://www.youtube.com/watch?v=s1KuwKZ4SPg">https://www.youtube.com/watch?v=s1KuwKZ4SPg</a>
		Birla Carbon Manufacturing Film: Birla Carbon
	3.	<a href="https://www.youtube.com/watch?v=cUi-JJ8og30">https://www.youtube.com/watch?v=cUi-JJ8og30</a>
		Activated carbon plant-Agni Carbon, Faridabad (H)
	4.	<a href="https://www.youtube.com/watch?v=son8yyD-T E">https://www.youtube.com/watch?v=son8yyD-T E</a>
		Activated Carbon in Action- Philips Carbon,
	5.	<a href="https://www.youtube.com/watch?v=KZ4nIHJqm0o">https://www.youtube.com/watch?v=KZ4nIHJqm0o</a>
		Activated carbon production-Russia
<b>Lecture-12</b>		<b>Biofuel</b>
	1.	<a href="https://youtu.be/ZGmwtDffc74">https://youtu.be/ZGmwtDffc74</a>
		(Overview on Biofuel- Student Energy, USA)
	2.	<a href="https://www.youtube.com/watch?v=v2ZxmdYwk1E">https://www.youtube.com/watch?v=v2ZxmdYwk1E</a>
		(Biofuel-Rajya Sabha TV)
	3.	<a href="https://www.youtube.com/watch?v=l1tyo8qvU70">https://www.youtube.com/watch?v=l1tyo8qvU70</a>
		(Biofuels-National biofuel policy, what is biofuel?)
	4.	<a href="https://www.youtube.com/watch?v=o41rErDFD98">https://www.youtube.com/watch?v=o41rErDFD98</a>
		(National Policy on Biofuel-Rajya Sabha TV)
<b>Lecture-13</b>		<b>Biodiesel</b>
	1.	<a href="https://www.youtube.com/watch?v=aLmF4IA2mfl">https://www.youtube.com/watch?v=aLmF4IA2mfl</a>
		The Difference Between Diesel and Biodiesel
	2.	<a href="https://www.youtube.com/watch?v=9-SaPRccSDE">https://www.youtube.com/watch?v=9-SaPRccSDE</a>
		(How is biodiesel made from vegetable oil-Utah Biodiesel Supply (UBS))
	3.	<a href="https://www.youtube.com/watch?v=47tGa-iOtLU">https://www.youtube.com/watch?v=47tGa-iOtLU</a>
		(Chemistry of Biodiesel- Biodiesel Education Prog., Univ.of Idaho, USA)
	4.	<a href="https://www.youtube.com/watch?v=zj6fDDQrI3w">https://www.youtube.com/watch?v=zj6fDDQrI3w</a>
		(Making Biodiesel- Biodiesel Education Prog., Univ.of Idaho, USA)
	5.	<a href="https://www.youtube.com/watch?v=DXjb7uLI7_o">https://www.youtube.com/watch?v=DXjb7uLI7_o</a>
		(Biodiesel : Future of Fuel in India   How to make Biodiesel)
	6.	<a href="https://www.youtube.com/watch?v=6Wn-kD5YzqA">https://www.youtube.com/watch?v=6Wn-kD5YzqA</a>
		Biodiesel Production from Vegetable Oil-Omaha Biofuel Coops, USA

Lectures	S. No.	
<b>Lecture-14</b>		<b>Bioethanol</b>
	1.	<a href="https://www.youtube.com/watch?v=pSTouSMmL28">https://www.youtube.com/watch?v=pSTouSMmL28</a> (Bioethanol-Lok Sabha TV)
	2.	<a href="https://www.youtube.com/watch?v=A9BB-A2uc0I">https://www.youtube.com/watch?v=A9BB-A2uc0I</a> (Bioethanol Production from Rice Straw - Thuraiya Kodir, Malaysia)
	3.	<a href="https://www.youtube.com/watch?v=0GyAGDqWmjw&amp;t=106s">https://www.youtube.com/watch?v=0GyAGDqWmjw&amp;t=106s</a> (India's First 2G ETHANOL Production Plant   Inaugurated by Dr. Harsh Vardhan   News in Science)
<b>Lecture-15</b>		<b>Bio ATF</b>
	1.	<a href="https://www.youtube.com/watch?v=kKO6TuH_OeQ">https://www.youtube.com/watch?v=kKO6TuH_OeQ</a> (Biofuels: Renewable Jet Fuel)
	2.	<a href="https://www.youtube.com/watch?v=7-JwzfkAesc">https://www.youtube.com/watch?v=7-JwzfkAesc</a> Boeing Airpower Teaming System: A smart unmanned team for global forces
	3.	<a href="https://www.youtube.com/watch?v=pLye9duz1nU">https://www.youtube.com/watch?v=pLye9duz1nU</a> Renewable Biofuels and Biochemicals: Biojet Fuel
<b>Lecture-16</b>		<b>Bio-pulping</b>
	1.	<a href="https://www.youtube.com/watch?v=mg5HXNBUYi0">https://www.youtube.com/watch?v=mg5HXNBUYi0</a> Fibria's pulp production process - Short version
	2.	<a href="https://www.youtube.com/watch?v=eA1n_dQMXRI">https://www.youtube.com/watch?v=eA1n_dQMXRI</a> UPM - How do we make pulp
<b>Lecture-17</b>		<b>Bio-butanol</b>
	1.	<a href="https://www.youtube.com/watch?v=r4r9YsO8R0U">https://www.youtube.com/watch?v=r4r9YsO8R0U</a> Butanol Production-Devabrata Das, Dept. of Biotechnology, IIT Kharagpur, NPTEL, Lecture-50
	2.	<a href="https://www.youtube.com/watch?v=iPI5CzZA_7Q">https://www.youtube.com/watch?v=iPI5CzZA_7Q</a> ButaNext - Next generation of biobutanol-Greenovate Europe
	3.	<a href="https://www.youtube.com/watch?v=m8MvOKDYpao">https://www.youtube.com/watch?v=m8MvOKDYpao</a> Biobutanol Animation- Biofuel Research Centre, Edinburg Napier University, UK
<b>Lecture-18</b>		<b>Pre-Treatment</b>
<b>Lecture-19</b>		
	1.	<a href="https://www.youtube.com/watch?v=hu-SHIVisWc">https://www.youtube.com/watch?v=hu-SHIVisWc</a> Pretreatment of Woody Biomass for Biofuel Production- J.Y. Zhu from the USDA Forest service, Forest Products Lab.
	2.	<a href="https://www.youtube.com/watch?v=5FqUxeWhJZO">https://www.youtube.com/watch?v=5FqUxeWhJZO</a>

		Bioenergy 101: Pretreatment / Processing of Feedstocks [2019 CABBI Retreat]- Institute for Sustainability, Energy, and Environment at the University of Illinois, USA
	3.	<a href="https://www.youtube.com/watch?v=Neog6PXyoW0">https://www.youtube.com/watch?v=Neog6PXyoW0</a>
		LIGNOCELLULOSIC PRET 2- SM Bhatt, India
<b>Lectures-20</b>		<b>Biomaterials</b>
	1.	<a href="https://www.youtube.com/watch?v=yZVvz9S5lb4">https://www.youtube.com/watch?v=yZVvz9S5lb4</a>
		Fundamentals of Biomaterials- <a href="#">Springer Videos</a>
	2.	<a href="https://www.youtube.com/watch?v=yZKdFVAJcrE">https://www.youtube.com/watch?v=yZKdFVAJcrE</a>
		Mod-01 Lec-01 Lecture-01-Introduction to Biomaterials By Prof. Biramjit Basu & Prof. Kantesh Balani-NPTEL, Dept. of Materials Science & Metallurgical Eng., IIT Kanpur
	3.	<a href="https://www.youtube.com/watch?v=Wt3s9z0seel">https://www.youtube.com/watch?v=Wt3s9z0seel</a>
		Mod-01 Lec-02 - Lecture-02-Introduction to Biomaterials By Prof. Biramjit Basu & Prof. Kantesh Balani-NPTEL, Dept. of Materials Science & Metallurgical Eng., IIT Kanpur
	4.	<a href="https://www.youtube.com/watch?v=VU3gih-RaQ&amp;pbjreload=101">https://www.youtube.com/watch?v=VU3gih-RaQ&amp;pbjreload=101</a>
		Mod-01 Lec-03 Lecture-03-Introduction to Biomaterials By Prof. Biramjit Basu & Prof. Kantesh Balani-NPTEL, Dept. of Materials Science & Metallurgical Eng., IIT Kanpur